# BAY AREA AIR QUALITY MANAGEMENT DISTRICT

# STAFF REPORT

# PROPOSED AMENDMENTS TO

# REGULATION 9, RULE 11

# NITROGEN OXIDES AND CARBON MONOXIDE FROM

# UTILITY ELECTRIC POWER GENERATING BOILERS

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# DRAFT STAFF REPORT

# PROPOSED AMENDMENTS TO REGULATION 9, RULE 11: NITROGEN OXIDES AND CARBON MONOXIDE FROM UTILITY ELECTRIC POWER GENERATING BOILERS

## EXECUTIVE SUMMARY

In accordance with state law, AB 1890, the electric utility industry is being restructured under the direction of the California Public Utility Commission (CPUC). As a result, the owner/operator of all the sources regulated by Regulation 9-11, PG&E, has recently divested three of the four facilities that contain these sources in the Bay Area. Under electric utility industry restructuring, the system of these boilers may no longer be a CPUC-regulated utility in the future, and as such, could, in theory, possibly escape the requirements of District Rule under the guise of non-applicability.

In the past, a single owner, PG&E, operated all the facilities (and thus all the affected boilers), and complied with the requirements of the Rule under the systemwide averaging option. The rule amendments proposed herewith are designed to:

- Ensure that the emission standards contained in the Rule will continue to apply regardless of CPUC regulatory status or facility ownership;
- Clarify the definition of "electric utility power generating system" to recognize that the facilities can be divested, and to allow for multiple electric generating systems or owners, each operating independently under the systemwide averaging option available in the Rule;
- Streamline the definitions of "emergency natural gas curtailment" and "electric system emergency"; and
- Prevent "backsliding" in the future in the event of more changes in electric utility ownership. In other words, a new owner cannot revert back to individual boiler emission limits listed in the Rule if, by doing so, it would result in less stringent emission standards and less emission reductions than those under the existing systemwide limit.

The proposed amendments to Regulation 9-11 will provide for its continued applicability to all affected boilers, with the same or equivalent regulatory requirements, regardless of the ownership changes anticipated under electric utility industry and regulatory restructuring. The same intended NOx emission reductions are expected to occur under the amended rule. Staff does not expect any significant adverse environmental or socioeconomic impact as a result of the proposed amendments.

## BACKGROUND

Regulation 9, Rule 11 was adopted by the District on February 16, 1994, and amended on November 15, 1995, to control emissions of nitrogen oxides (NOx), an ozone precursor, from electric utility steam generation boilers, to fulfill the Best Available Retrofit Control

Technology (BARCT) requirements under the California Clean Air Act. In addition, a Reasonably Available Control Technology Requirement (RACT) standard was included in the Rule to satisfy federal Clean Air Act requirements. The Rule also contains carbon monoxide (CO) limits to ensure that those emissions are not increased as a result of NOx controls.

The Rule controlled emissions from the 23 electric utility boilers located in four facilities in the Bay Area, beginning in 1995, with emission standards that were boiler specific and ratcheted down (tightened) progressively to a final compliance date in 2005. The affected facilities are the Pittsburg and Contra Costa (Antioch) Plants in Contra Costa County, and the Potrero and Hunters Point Plants in San Francisco. Up until April 16, 1999, all four facilities were owned and operated by a single entity, Pacific Gas & Electric Company (PG&E). PG&E had elected to comply with the NOx requirements of the Rule by selecting the systemwide averaging option allowed in Regulation 9, Rule 11, Section 309, the Advanced Technology Alternative Emission Control Plan (ATAECP). The ATAECP requires that the owner/operator of the affected boilers to meet systemwide average emission rate of 0.28 pounds NOx per million BTU fuel fired, on a clock hour average basis, in 1995 (approximately 235 ppmvd @ 3 % $O_2$), with an ultimate limit of 0.018 lb/MMBTU in 2005 (approximately 15 ppmvd @ 3 % $O_2$). This systemwide average emission limit achieves overall NOx emission reductions equivalent to what would be obtained from adherence to the specific boiler limits in the Rule.

After the Rule had been adopted by the District, Assembly Bill 1890 became state law in 1996, calling for the restructuring of the electric utility industry, to promote increased competition with the intent of lowering the price of electricity to the user. Implementation of AB 1890 by the California Public Utilities Commission (CPUC) has caused PG&E to divest (sell) three of the four power plant facilities it once owned. The CPUC is phasing out of many of the regulatory responsibilities it has historically held. Some of this void in oversight will be filled by two new quasi-private/government bodies, the Independent System Operator (ISO) with some authority over power plant dispatch and electric transmission, and the Power Exchange (PX), an open market forum for the buying and selling of electricity. In this new restructured electric utility industry, it could be theoretically argued that a power plant, once sold by PG&E, would no longer be "a CPUC regulated utility" and under the applicability description of Section 9-11-101, no longer subject to the District Rule.

The fact is that the power plants after divestiture would become just “less-regulated utilities of the CPUC,” not unregulated entities. Indeed under state law, the California Public Utilities Code, Division 1, Part 1, Chapter 1, Sections 207 and 216, defines a public utility to include electrical corporations that supply electrical service or electricity to the public or any portion thereof, including private corporations. Thus it can be just as easily argued that divested power plants would still be a utility regulated to at least a degree by the CPUC and thus still be subject to District Regulation 9-11.

To protect the environment and ensure that emission reductions achieved and anticipated under the Rule would still occur, regardless of CPUC regulatory status or ownership

changes under industry restructuring, the District modified the operating permits of the four affected power plants to incorporate the applicable Regulation 9-11 requirements. This was accomplished on April 1, 1999 with the re-issuance of the operating permits with the modified conditions. The District was able to do this under the authority of the California Environmental Quality Act (CEQA) and the CEQA Mitigation Measure 4.5-5, Final EIR, as certified by the CEQA Lead Agency, CPUC Commissioners Decision 98-11-064, November 19, 1998. The EIR study was undertaken to evaluate the impacts of divestiture of the four PG&E plants. The change in ownership in the three plants that were sold did not occur until April 16, 1999, after the operating permits were modified. Thus, there was no gap in applicability, theoretical or otherwise, of the Regulation 9-11 requirements to the affected plants.

## PURPOSE OF PROPOSED AMENDMENTS

To remove any uncertainty in the applicability of the Rule to the subject electric power generation steam boilers, the District is proposing amendments that are essentially administrative in nature to ensure that the standards in the Rule will continue to apply regardless of CPUC regulatory status of facility ownership. When the Rule was adopted, use of the CPUC regulated status clearly identified the subject boilers. Under the proposed amendments, references to the CPUC status are removed, but new language is added so that other sources are not inadvertently affected, and the definitions of an electric power generating system, an emergency natural gas curtailment, and an electric system emergency are modified to clarify rule requirements. In addition the language of the systemwide average alternative emission control plan option is reinforced to handle possible future changes in facility ownership and/or changes in makeup of the sources (boilers) at the facilities.

The proposed rule amendments maintain the equivalent emission reductions as required by the original rule, with no significant changes. The affected category of electric power generation steam boilers remains the same.

## PROPOSED AMENDMENTS

**Section 9-11-101:** In the description of rule applicability, references to “utility” and CPUC regulation are deleted. The rule now applies simply to electric power generating steam boilers. This is further limited in Section 9-11-114, as discussed below. In Section 9-11-101, the reference to Regulation 9, Rule 3 is removed. Regulation 9, Rule 11 now supercedes and is more stringent than Rule 3.

**Section 9-11-112:** The exemption for oil testing removes the reference to the CPUC, and now simply refers to performance testing required by a state or federal agency or the Air Pollution Control Officer (APCO).

**Section 9-11-114:** A new exemption for duct burners and heat recovery steam generators that are used to recover sensible heat from the exhaust of combustion turbines is introduced here to avoid these sources that were not intended under Regulation 9-11.

There are at least three such steam generators with heat input capacities above 250 MMBTU/hr in the District. This exemption is required because of the proposed change in applicability in Section 9-11-101. It would not be fair to include these different sources under this Rule.

**Section 9-11-206:** The definition of electric utility power generating system is modified to remove references to "utility" and the CPUC. The concept of common ownership of affected steam boilers is introduced to streamline compliance with the systemwide option in the Rule. Originally, when PG&E owned all 23 affected boilers and four facilities, they could average all the NOx emissions across all facilities. The proposed amended rule will allow only those boilers and facilities under the same ownership to be averaged.

**Sections 9-11-207 and 9-11-208:** References to "utility" and the CPUC are removed. References to generic state, federal, or local agency rules or orders are added to clarify the definition of force majeure natural gas curtailment. Again, these changes are necessitated by the restructuring of the industry and CPUC authority. Other editorial changes are made to improve clarity.

**Section 9-11-220:** The definition of an electric power generating steam boiler is added to eliminate any uncertainty in the sources that are affected by this Rule. Because of electric industry restructuring and deregulation, the qualifying phrase "CPUC regulated utility", in the current Rule in Section 9-11-101, had to be removed from the description of affected sources. Addition of the definition of an electric power generating steam boiler will clarify the affected source category and make it clear that steam boilers that do not generate electricity are exempt from Regulation 9-11 (but generally are regulated by Regulation 9, Rule 7 or 10).

**Section 9-11-309:** The systemwide NOx emission rate limit in Subsection 309.1 is reinforced by stating that all of Section 309 must be complied with, including Subsections 309.2, 309.3, and 309.4. References to the CPUC are deleted, and generic state, federal, and local agency references are added here and elsewhere in the proposed amended rule as appropriate.

With the clarified definition in Section 9-11-206 of an electric power generating system, each power plant or group of power plants under common ownership can be its own electric power generating system. Thus, under Section 9-11-309, each power plant or group of power plants commonly owned can meet the NOx emission standards of the Rule by meeting the systemwide emission rate limit year by year as specified in Subsection 309.1. The original Rule implied that this was possible; the proposed amendments explicitly allow for it.

A "no backsliding" provision is added in Subsection 309.3. With the breakup of the original PG&E electric power generating system, a new owner under the Rule could elect to comply under the individual boiler emission limits, declining the systemwide averaging option. Under certain limited circumstances and timing, it could be possible for the new owner to come under individual boiler emission limits less stringent than the

systemwide average. Subsection 309.3 prevents the owner from this move if by doing so, less stringent emission limits are obtained.

Finally, Subsection 309.4 limits the boilers that can be included in the systemwide average to those units that had a valid District Permit to Operate prior to November 15, 1995, the date the Rule was last amended to include the averaging option. The Subsection 309.4 limitation is added to prevent an owner from including a new boiler or a repowered unit into the systemwide average, thereby diluting the emission reduction requirements. New or repowered sources would be subject to District Best Available Control Technology (BACT) requirements that are more stringent than the BARCT requirements of Regulation 9-11. Allowing inclusion of a new or repowered source would, in effect, relax the NOx reductions necessary from the existing boilers to achieve the systemwide emission limit. For example, Southern Company, the new owner of the Contra Costa and Potrero Plants, is considering repowering at those facilities.

**Section 9-11-402:** Words are added to make it clear that compliance ammonia source testing is required only for those affected boilers that are equipped with ammonia-based NOx control devices.

## AFFECTED FACILITIES AND EMISSIONS

The proposed rule amendments will not change the four affected facilities identified in the background discussion above. The original 23 electric power generating steam boilers have been reduced in number with the retirement of 8 “small” boilers at the Contra Costa Plant.

The NOx emission reductions that are expected from Regulation 9-11 are 10 to 26 ton/day when the Rule is fully implemented in 2005. The range in estimated emission reductions is broad because of the uncertainty in forecasting future electricity demands, rainfall predictions for hydroelectric power which could displace some fossil fuel combustion and reduce emissions, the future power generating landscape, etc. In any event, the proposed amendments to the Rule are essentially administrative in nature, and as such should have no effect on emissions or emission reductions.

## ENVIRONMENTAL IMPACTS

The proposed rule amendments are essentially administrative in nature and as such maintain equivalent rule standards regardless of CPUC regulatory status or changes in ownership of the affected facilities. In the recent past, a single company, PG&E owned all four power plants and complied with the NOx emission standards by meeting the systemwide average rate limit in Section 9-11-309, averaged over all four plants. With industry restructuring and divestiture, ownership of the plants is divided between PG&E, which now retains only the Hunters Point Plant, and Southern Energy Co., which now owns the other three plants. Under the proposed rule amendment, Southern Energy can average the emissions from its three plants, while PG&E averages the emissions of the affected boilers at its Hunters Point Plant. Thus, for example, each electric power

generating system must independently meet the systemwide emission rate limit or "bubble limit" of 0.105 lb/MMBTU in 2000, and 0.018 lb/MMBTU in 2005.

Clearly, two systems or "bubbles", each meeting the same emission rate limit, collectively emit the same or slightly less emissions than a single system or "bubble" encompassing all the boilers collectively meeting the same emission rate (as was the case of sole PG&E ownership). In the future, if the plants are resold, and four independent electric generating systems (facilities, in this case) result, then there would be four "bubbles", again with equivalent or slightly less emissions. Since the additional bubbles are not expected to change emissions and emission reductions significantly, there should be no significant impact from these proposed rule amendments.

## SOCIOECONOMIC IMPACTS

Section 40728.5 of the California Health and Safety Code requires the District to perform an assessment of the socioeconomic impacts for any rule amendment that will significantly affect air quality or emission limitations. The amendments proposed here are essentially administrative in nature and as such should have no significant impact on air quality or emission limitations. Besides, the changes proposed here are well within the scope and range of the socioeconomic study that was completed for the original Rule adopted on February 16, 1994.

## INCREMENTAL COSTS

Section 40920.6 of the California Health and Safety Code requires air districts to perform an incremental cost analysis for a proposed rule if the purpose of the rule is to meet the requirement for best available retrofit control technology or a feasible measure pursuant to Section 40914. Since the proposed rule amendments will not impose any new control requirements or modifications to emission standards, this incremental cost analysis is not required.

## REGULATORY IMPACTS

California Health and Safety Code Section 40727.2 requires air districts to identify existing federal and district air pollution control requirements that apply to equipment of the same source type and to discuss differences between the current and proposed requirements. The proposed rule amendments do not impose any new or different control requirements, emission limitations, monitoring, record keeping, or reporting requirements. Therefore Section 40727.2 does not apply.

## DISTRICT STAFF IMPACTS

The proposed rule amendments do not impose any new or different control requirements, emission limitations, monitoring, record keeping, or reporting requirements. Thus, these amendments are expected to have no impact on staff requirements.

## RULE DEVELOPMENT HISTORY

A public workshop to discuss the proposed rule amendments was conducted on February 29, 2000. In attendance were representatives of the affected power plant facilities, PG&E and Southern Energy, the California Independent System Operator (ISO), the San Francisco Public Utilities Commission, a local environmental group, Southeast Alliance for Environmental Justice, and other interested parities. Comments on the proposed amendments were received at the workshop and subsequent.

The California ISO asked that general references to federal agencies be added to the local and state agency references in regards to *force majeure* (emergency) natural gas curtailments in Section 9-11-208. This was incorporated in the proposed amended rule.

PG&E requested that the source testing requirements for ammonia be limited to only those boilers equipped with ammonia-based NOx control devices; i.e., clarification of an existing requirement in Section 9-11-402. This was done. PG&E also asked if the sixty-day boilers-out-of-service provision of Subsection 9-11-309.2.3 could be interpreted in equivalent hours as well. District staff response was that the original rule intent was to limit the provision to 60 days in a calendar year, not to extend the period by counting only hours out of operation. Thus, no change was made.

Southern Energy suggested some miscellaneous editorial word changes for clarity. This was done. Southern Energy also asked for consideration of changing the frequency in sampling of the Continuous Emission Monitors. District staff responded that it could not move forward in that direction without a formal proposal and demonstration of equivalency.

Tosco Refining asked that a definition of an electric power generating steam boiler be added. Even though the existing Rule already includes definitions of a boiler and an electric power generating system, District staff accepted this suggestion to add clarity. The proposed rule amendments dropped the qualifying phrase “CPUC-regulated utility” from the applicability Section 9-11-101 because of industry restructuring and deregulation. The added definition will avoid including steam boilers at petroleum refineries, which are already regulated under Regulation 9, Rule 10.

Southeast Alliance for Environmental Justice (SAEJ) expressed concern that due to power plant divestiture and CPUC deregulation of the electric utility industry, the new owner/operators of the affected boilers could potentially increase their capacity factors and significantly increase emissions of NOx and PM10. These issues have already been addressed at great length by the Environmental Impact Report (EIR) prepared and certified by the CEQA lead agency, the California Public Utilities Commission, Commissioners Decision 98-11-064, November 19, 1998. The EIR concluded that significant increased power production and NOx emissions due to divestiture are plausible but highly unlikely (EIR, pages 3-12 ff. and 4.5-81. Indeed, the EIR states that Regulation 9-11 control requirements will mitigate this potential increase, and if such an increase were to occur, it would only be a temporary effect in the year 2000 time frame.

In point of fact, the EIR identified this proposed rule amendment as a necessary CEQA Mitigation Measure 4.5-5 for the CPUC's divestiture project, to ensure that the Rule continues to apply even if the power plants are no longer CPUC-regulated utilities. Adoption of the proposed amendments will facilitate the continued enforcement of Regulation 9-11 requirements and would help ratchet down the potential increased emissions, if they were to occur, to less than significant levels in subsequent years. The EIR also concluded that air quality modeling of the worst case NOx and PM10 emissions, due to increased power plant operation, has demonstrated that the potential emission increases are not significant, even at the local level, based on the state's health-based, ambient air quality standards.

## CONCLUSION

The proposed rule amendments are essentially administrative in nature and as such should have no significant adverse impact on emissions, costs, or the environment (see attached CEQA initial study). The amendments are necessitated by changes in CPUC regulatory status and electric industry restructuring. The rule changes will help ensure that Regulation 9-11 will continue to apply to the affected power plants and that the same intended emission reductions will occur.

Pursuant to Section 40727 of the California Health and Safety Code, regulatory amendments must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed amendments are:

- Necessary to re-affirm the applicability of District Regulation 9, Rule 11 to electric power generating steam boilers in the Bay Area, due to industry restructuring and deregulation mandated by AB 1890 through changes to Sections 216 , 330, 840, 9600, and 394 of the California Public Utilities Code;
- Authorized by Sections 40000, 40001, 40702, 42300 et seq., and 40725 through 40728 of the California Health and Safety Code;
- Written or displayed so that its meaning can be easily understood by the persons directly affected by it;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules, or regulations; and are implementing, interpreting, or making specific the provisions of California Health and Safety Code Sections 40000, 40702, and 42300 et seq.

The proposed amendments have met all legal noticing requirements and have been discussed with all interested parties. District staff recommends adoption of the proposed amendments to Regulation 9, Rule 11, Nitrogen Oxides and Carbon Monoxide from Utility Electric Power Generating Boilers, and the proposed Negative Declaration.